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EXAMINER	
VATHYAM, SUREKHA	
ART UNIT	PAPER NUMBER
1753	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	12/22/2006	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/648,031	NAKAZATO, TOKIYA	
	Examiner	Art Unit	
	Surekha Vathyam	1753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 August 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-39* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-39* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 August 2003* is/are: a)☐ accepted or b)☒ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *02/09/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "100" has been used to designate both "transferring belt" ([0038, line 5) and "scan station" ([0051], line 3).

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(4) because reference character "30" has been used to designate both "disposal unit ([0051], line 11) and "carrier" ([0052], line 9 – 10).

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: "7", "57", "76" and "101".

4. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Specification

5. The disclosure is objected to because of the following informalities:

[0021], line 13, the phrase "to on the" should be changed to "to the";

[0028], line 1, the phrase "the of staining" should be changed to "the staining";

[0029], line 10, the word "having" should be changed to "have";

[0037], line 1, the phrase "method present" should be changed to "method of the present";

[0051], line 6, the phrase "the measuring to the" should be changed to "measuring the".

Appropriate correction is required.

Claim Objections

6. Claim 1 is objected to because of the following informalities: line 9 of claim 1 should be corrected to read, "gel plate" instead of "gel plat". Appropriate correction is required.

7. Claim 3 is objected to because of the following informalities: line 6 of claim 3 should be corrected to read, "said reagent from" instead of "said from". Appropriate correction is required.

8. Claim 8 is objected to because of the following informalities: line 4 of claim 8 should be corrected to read, "into said" instead of "into to said". Appropriate correction is required.

9. Claim 16 is objected to because of the following informalities: line 2 of claim 16 should be corrected to read, "drying" instead of "dying". Appropriate correction is required.

10. Claim 20 is objected to because of the following informalities: line 6 of claim 20 should be corrected to read, "remove the stain therefrom" instead of "remove to staining therefrom". Appropriate correction is required.

11. Claim 24 is objected to because of the following informalities: line 11 of claim 24 should be corrected to read, "staining means" instead of "staining meaning". Appropriate correction is required.

12. Claim 25 is objected to because of the following informalities: line 2 of claim 25 should be corrected to read, "than" instead of "then". Appropriate correction is required.

13. Claim 30 is objected to because of the following informalities: line 2 of claim 30 should be corrected to read, "electrophoresing means" instead of "electrophoresing meaning". Appropriate correction is required.

Claim Rejections - 35 USC § 102

14. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1, 7 – 11, 16 – 18, 21, 24 – 25, 29 – 30 and 34 – 36 are rejected under 35 U.S.C. 102(b) as being anticipated by Sarrine et al. (US 5,460,709).

Regarding claim 1, Sarrine ('709) discloses a method of in situ electrophoresis (column 1, lines 17 – 19) of biological samples (column 1, lines 15 – 17) comprising: preparing a sample plate (column 14, lines 64 – 35) and a gel plate (column 7, line 21 – column 8, line 10); applying reagent onto said gel plate (column 7, lines 32 – 35); moving an applicator to said sample plate so as to receive a sample onto said applicator (column 16, lines 2 – 24), moving said applicator toward said gel plate such that at least a portion of said sample on said applicator is loaded onto said gel plate (column 16, lines 24 – 30); electrophoresing the sample-loaded gel plate (column 16, line 41 – column 17, line 12), staining the electrophoresed gel plate (column 17, lines 13 – 56); and scanning the stained gel plate so as to electronically analyze a band in the gel of said gel plate (column 19, lines 39 – 67).

Regarding claim 7, Sarrine ('709) discloses the method wherein said step of preparing the sample plate comprising forming a plurality of sample wells on the sample plate (column 14, line 64 – column 15, line 2), said step of moving said applicator into said sample plate comprising: conveying said sample plate so as to be adjacent said gel plate (column 15, line 2 – 5); and lowering said applicator into at least one of said plurality of sample wells on said sample plate such that the sample is adhesively secured to said applicator (column 16, lines 2 – 24).

Regarding claim 8, Sarrine ('709) discloses the method wherein said applicator (50) comprising a plurality of applicator elements (52), said plurality of applicator elements (52) correspond respectively to said plurality of sample wells (162) (see figs. 5 and 17), said step of lowering comprising: lowering said plurality of applicator elements

into to said plurality of sample wells on said sample plate such that each of said plurality of applicator elements receives the sample from a separate sample well on said sample plate (column 16, lines 2 – 24).

Regarding claim 9, Sarrine ('709) discloses the method wherein said step of moving said applicator to said gel plate comprising: positioning said applicator above said gel plate (column 16, lines 24 – 26); lowering said applicator into the gel of said gel plate such that the portion of said sample is retained by the gel (column 16, lines 26 – 30); and lifting said applicator away from said gel plate (column 16, lines 38 – 46).

Regarding claim 10, Sarrine ('709) discloses the method wherein said gel plate having electrodes formed thereon (column 8, lines 6 – 10), said step of electrophoresing comprising: conveying the sample-loaded gel plate to an electrophoresis device (column 11, lines 59 – 66); connecting said electrodes of said gel plate to a power source (column 8, line 39 – column 9, line 2); and applying an electrical field to said gel plate (column 16, line 64 – column 17, line 2).

Regarding claim 11, Sarrine ('709) discloses the method wherein said step of staining comprising: applying a staining reagent onto a surface of the electrophoresed gel plate (column 17, lines 13 – 38).

Regarding claim 16, Sarrine ('709) discloses the method further comprising: drying the staining reagent gel plate prior to said step of scanning (column 17, line 57 – column 18, line 31).

Regarding claim 17, Sarrine ('709) discloses the method wherein said step of drying comprising: moving the stained gel plate to a drying station (column 17, lines 57 – 61); and oven drying the stained gel plate (column 17, line 62 – column 18, line 5).

Regarding claim 18, Sarrine ('709) discloses the method wherein said step of drying comprising: conveying the stained gel plate to a drying station (column 17, lines 57 – 61); and air drying the stained gel plate (column 18, lines 13 – 16).

Regarding claim 21, Sarrine ('709) discloses the method wherein said step of scanning comprising: measuring a location and an intensity and a resolution of the band so as to create a profile for sample identification (column 12, lines 14 – 31 and column 18, lines 63 – 66); and displaying the profile on a display screen (column 21, lines 62 – 64).

Regarding claim 24, Sarrine ('709) discloses an apparatus for in situ electrophoresis (column 1, lines 17 – 19) of biological samples (column 1, lines 15 – 17) comprising: a housing (38); a sample plate (158); a gel plate (110); a reagent dispensing means (54) positioned on said housing (see fig. 2 and column 6, lines 29 – 40), said reagent dispensing means being cooperative with said gel plate for applying a reagent onto said gel plate (column 11, line 67 – column 12, line 3); an applicator means (50) positioned on said housing (see fig. 2 and column 6, lines 29 – 40) and cooperative with said sample plate and with said gel plate for loading a sample from said sample plate onto said gel plate (column 15, line 67 – column 16, line 30); an electrophoresing means (column 3, lines 18 – 20) positioned in said housing for

electrophoresing the sample-loaded gel plate (column 7, line 51 – column 8, line 10); a staining means (see abstract and column 3, lines 21 – 29) positioned in said housing for staining the electrophoresed gel plate (column 11, line 59 – column 12, line 13); and a scanning means cooperative with said housing (column 2, lines 38 – 42 and column 3, lines 36 – 52) for scanning the stained gel plate to electronically analyze a band in the gel of said gel plate (column 12, lines 14 – 31).

Regarding claim 25, Sarrine ('709) discloses the apparatus wherein said sample plate being stacked in a different location of said housing than said gel plate (see fig. 16).

Regarding claim 29, Sarrine ('709) discloses the apparatus wherein said applicator means (50) comprising: an applicator having a plurality of applicator elements (52) thereon, said applicator being movably positioned on said housing (see fig. 2) so as to lower said plurality of applicator elements into a corresponding plurality of sample wells formed in said sample plate, said applicator being movable so as to lift said plurality of applicator elements from said plurality of sample of wells (see Fig. 17 and column 12, line 32 – column 13, line 7; column 15, line 67 – column 16, line 24).

Regarding claim 30, Sarrine ('709) discloses the apparatus wherein said gel plate (110) having electrodes (144 and 146) formed thereon, said electrophoresing meaning comprising: a power means (64) positioned on said housing (see fig. 2), said electrodes of said gel plate being selectively connectable to said power means for applying an electrical field to said gel plate (see fig. 6 and column 8, line 39 – column 9, line 2).

Regarding claim 34, Sarrine ('709) discloses the apparatus further comprising: a drying means positioned on said housing, said drying means for drying the stained gel plate (column 3, lines 31 – 34 and column 18, lines 6 – 31).

Regarding claim 35, Sarrine ('709) discloses the apparatus wherein said drying means being an oven dryer (column 17, line 57 – column 18, line 5).

Regarding claim 36, Sarrine ('709) discloses the apparatus wherein said drying means being an air dryer (column 18, lines 6 – 16).

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrine et al. (US 5,460,709) in view of Warren et al. (US 5,200,045).

Sarrine ('709) discloses the method of in situ electrophoresis as discussed with regards to claim 1 above. Regarding claim 2, Sarrine ('709) does not explicitly disclose the step of stacking a plurality of sample plates and gel plates.

Warren ('045) teaches a step of stacking a plurality of plates as an alternative to providing a single plate (column 2, lines 4 - 11).

It would have been obvious to one of ordinary skill in the art to have modified the method of Sarrine ('709) to include the step of stacking a plurality of the plates of Sarrine ('709) as taught by Warren ('045) because Warren ('045) expressly teaches stacking a plurality of plates as an alternative to providing a single plate (column 2, lines 4 - 11).

19. Claims 3 – 6 and 27 – 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrine et al. (US 5,460,709) in view of Cathcart et al. (US 5,443,791).

Sarrine ('709) discloses the method of in situ electrophoresis as discussed with regards to claim 1 above. Regarding claim 3, Sarrine ('709) discloses the method wherein said step of applying said reagent comprises loading reagent into reagent reservoir (240) (column 9, line 65 – column 10, line 1) and transferring said reagent onto said gel plate (column 11, line 67 – column 12, line 3). Sarrine ('709) does not explicitly disclose loading a plurality of reservoirs with reagents or transferring reagent using a pipette.

Cathcart ('791) teaches a step of applying reagent that comprises loading a plurality of reagents into a respective plurality of reagent reservoirs (column 17, lines 52 – 54), positioning a pipette in proximity to at least one of said plurality of reagent reservoirs (column 20, lines 61 – 62); loading said pipette with said reagent (column 20, line62 – column 21, line 20), and transferring said reagent from said pipette (column 21, line 20 – 31).

It would have been obvious to one of ordinary skill in the art to have modified the method of Sarrine ('709) to include the step of loading a plurality of reagent reservoirs and transferring reagent from the reservoir using a pipette as taught by Cathcart ('791) because as Cathcart explains there is a great benefit to automating electrophoresis processes with automated liquid handling processes in tracking genetic diseases more efficiently (column 23, line 10 – column 24, line 19).

Regarding claim 4, Cathcart ('791) teaches a single pipette (see fig. 1 and column 8, lines 14 – 32).

Regarding claim 5, Cathcart ('791) teaches a step of washing said pipette subsequent to the step of transferring the reagent from said pipette (column 7, lines 60 – 64).

Regarding claim 6, Sarrine ('709) discloses steps of washing pipettes comprising: aligning said pipette with a water wash; flushing an interior of said pipette with water; rinsing an exterior of said pipette with water, blotting a tip of said pipette so as to remove water therefrom, and aspirating said interior of said pipette (column 15, lines 51 – 66). Cathcart ('791) also teaches steps of washing a pipette (see fig. 11 and column

22, lines 1 – 31). Cathcart ('791) (column 21, lines 60 – 68) explains that washing the pipette between liquid transfers has the benefit of avoiding cross-contamination.

Sarrine ('709) discloses the apparatus of in situ electrophoresis as discussed with regards to claim 24 above. Regarding claim 27, Sarrine ('709) discloses a single pipette (52) movably supported on said housing (38); and a plurality of sample wells (162) connected to said housing (see fig. 5), said single pipette (52) being movable so as to receive the sample from at least one of said plurality of sample wells (column 8, lines 14 – 19), said pipette being dispensable so as to release the sample onto said gel plate (column 8, lines 19 – 21). Sarrine ('709) does not explicitly disclose the reagent dispensing means comprising a single pipette or plurality of reagent reservoirs connected to the housing.

Cathcart teaches a reagent dispensing means comprising a single pipette (see fig. 1 and column 8, lines 14 – 32) and a plurality of reagent reservoirs (27) connected to a housing (column 7, lines 65 – 68).

It would have been obvious to one of ordinary skill in the art to have modified the apparatus of Sarrine ('709) to include a single pipette as taught by both Sarrine ('709) and Cathcart ('791) and a plurality of reagent reservoirs as taught by Cathcart ('791) in the reagent dispensing means because as Cathcart explains there is a great benefit to automating electrophoresis processes with automated liquid handling processes in tracking genetic diseases more efficiently (column 23, line 10 – column 24, line 19).

Regarding claim 28, Sarrine ('895) discloses the apparatus comprising a washing means positioned on said housing and cooperative with said pipette (see column 8, lines 14 – 27), said washing means for applying washing water (168) into an interior of said pipette and over an exterior of said pipette (172); and an aspirating means positioned on said housing and cooperative with said pipette for aspirating the interior of said pipette to remove the water therefrom (see fig. 17 and column 12, line 32 – column 13, line 7).

20. Claims 12 – 15 and 31 – 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrine et al. (US 5,460,709) in view of Tamura et al. (US 2003/0003022 A1) and Nobuo (JP 09-029162).

Sarrine ('709) discloses the method of in situ electrophoresis as discussed with regards to claim 11 above. Regarding claim 12, Sarrine ('709) discloses the method wherein said step of applying said staining reagent comprising: dispensing said staining reagent (column 11, line 67 – column 12, line 3); and spreading the said staining reagent across the electrophoresed gel plate (column 12, lines 3 – 13). Sarrine ('709) discloses the loading of a pipette with a reagent (column 8, lines 15 – 21). Sarrine ('709) does not explicitly disclose the staining reagent being loaded in a pipette and then onto a roller and moving the roller on the gel plate.

Tamura ('022) teaches loading a suction apparatus, such as the pipette (52) disclosed by Sarrine ('709), with a reagent ([0075], lines 4 – 7); dispensing reagent from loaded pipette onto a spreader ([0075], lines 4 – 7); and spreading a reagent across the

surface by moving said spreader across the surface ([0031]). Tamura ('022) does not explicitly teach the spreader to be a roller.

Nobuo ('162) teaches a coating roller (see abstract).

It would have been obvious to one of ordinary skill in the art to have modified the method of Sarrine ('709) to spread the staining reagent by pipetting and rolling the staining reagent to coat the gel plate as taught by Tamura ('022) and Nobuo ('162) because Tamura's ('022) automated apparatus includes a spreading mechanism along with a washing mechanism which ensures a satisfactory quality of coating without contamination present ([0006] – [0007]) which is similar to the benefit of the roller of Nobuo ('162) which also has an easy-to-clean feature in addition to providing a uniform coating as explained by Nobuo ('162) (see abstract).

Regarding claim 13, Sarrine ('709) discloses the method wherein the electrophoresed gel plate is conveyed below the staining reagent dispensing means (column 11, line 67 – column 12, line 3) and the staining reagent dispensing means is positioned over a staining window above the electrophoresis gel plate (column 11, line 67 – column 12, line 13). Tamura ('022) teaches a suction apparatus (205), such as one of the pipettes disclosed by Sarrine ('709), moving it on top of the surface where the reagent is to be dispensed and spread ([0075], lines 4 – 7); positioning the spreader over the reagent to be spread ([0075], lines 4 – 7). Nobuo ('162) teaches a roller to spread (see abstract).

Regarding claim 14, Nobuo ('162) teaches a step of washing a roller subsequent to a step of spreading and staining (see abstract). Tamura ('022) also teaches a method of washing the spreader subsequent to a step of spreading ([0007]).

Regarding claim 15, Tamura ('022) teaches a step of washing the spreader comprising: moving said spreader to a washing station having a water container ([0097]), lowering said spreader into said water container ([0102] and [0105]) and rolling spreader to release the water therefrom ([0108]); and drying said spreader ([0109]).

Sarrine ('709) discloses the apparatus of in situ electrophoresis as discussed with regards to claim 24 above. Regarding claim 31, Sarrine ('709) discloses a pipette (52) movably positioned on said housing (38) and a staining reagent reservoir (240). Sarrine ('709) does not explicitly disclose the staining means comprising a pipette and a roller.

Tamura ('022) teaches a suction apparatus (205) with a dispensing mechanism (14), such as the pipette (52) disclosed by Sarrine ('709), movably positioned on a housing (207); a reservoir (200) cooperative with said suction apparatus (see fig. 1 and [0059]); and a spreader (16) movably positioned on said housing (207) so as to be positionable below said pipette and spreadable over a plate (see fig. 3 and [0075]). Tamura ('022) does not explicitly disclose the spreader to be a roller.

Nobuo ('162) teaches a coating roller (4).

It would have been obvious to one of ordinary skill in the art to have modified the apparatus of Sarrine ('709) to include the pipette taught by both Sarrine ('709) and

Tamura ('022) and the roller taught by Nobuo ('162) in the staining means because Tamura's ('022) automated apparatus includes a spreading mechanism along with a washing mechanism which ensures a satisfactory quality of coating without contamination present ([0006] – [0007]) which is similar to the benefit of the roller of Nobuo ('162) which also has an easy-to-clean feature in addition to providing a uniform coating as explained by Nobuo ('162) (see abstract).

Regarding claim 32, Tamura ('022) teaches a washing means (82) positioned on a housing (see figs. 9 – 15 and [0094] – [0109]).

Regarding claim 33, Tamura ('022) teaches a washing means comprising: a water container having a water bath therein, said spreader being movable so as to submerge within said water bath ([0033] – [0036]).

21. Claims 19 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrine et al. (US 5,460,709) in view of Hudson et al. (US 5,801,004).

Sarrine ('709) discloses the method of in situ electrophoresis as discussed with regards to claim 1 above. Regarding claim 19, Sarrine ('709) does not explicitly disclose destaining the stained gel prior to the step of scanning.

Hudson ('004) teaches a method of destaining a gel after staining (column 3, line 64 – column 4, line 6).

It would have been obvious to one of ordinary skill in the art to have modified the method of Sarrine ('709) to include the step of destaining the gel as taught by Hudson

('004) because it helps remove the background color in gels due to the staining reagent as explained by Hudson ('004) (column 3, line 67 – column 4, line 3).

Sarrine ('709) discloses the apparatus of in situ electrophoresis as discussed with regards to claim 24 above. Regarding claim 37, Sarrine ('709) does not explicitly disclose a destaining means in the housing.

Hudson ('004) teaches a destaining means (column 3, line 67 – column 4, line 6).

It would have been obvious to one of ordinary skill in the art to have modified the apparatus of Sarrine ('709) to include a destaining means as taught by Hudson ('004) because it helps remove the background color in gels due to the staining reagent as explained by Hudson ('004) (column 3, line 67 – column 4, line 3).

22. Claims 20 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrine et al. (US 5,460,709) in view of Hudson et al. (US 5,801,004) as applied to claims 19 and 37 respectively, above, and further in view of Long (US 361,070).

Regarding claim 20, Hudson ('004) teaches the step of destaining comprising rocking the gel with destain (column 3, line 67 – column 4, line 3) which inherently involves the steps of lowering one end of the stained gel plate such that the stained gel plate is tilted at an angle; flowing destain across a surface of the stained gel plate such that destain flows from an elevated end of the stained plate toward the lower end of the stained gel plate; and wiping the surface of said gel plate so as to remove to staining therefrom. Hudson does not explicitly teach the destain to be water.

Long ('070) teaches steps of lowering one end of a print tray such that the tray is tilted at an angle; flowing water across a surface of the prints in the tray such that water flows from an elevated end of the tray toward the lower end of the tray; and wiping the surface of said gel plate so as to wash the prints therein (see figs. 1 – 5 and entire disclosure).

It would have been obvious to one of ordinary skill in the art to have modified the method of Sarrine ('709) to include a step of destaining that comprises the steps taught by Hudson ('004) and Long ('070) because as Long ('070) explains it provides a means of automatically shifting the position of the washing tray so as to cause the water to reach every portion of the tray and to constantly renew the water in every part of the tray (page 1, lines 19 – 24).

Regarding claim 38, Hudson ('004) teaches a destaining means comprising a rocker, which inherently works by having an actuator means positioned on a housing for lowering an edge of the gel plate. Hudson ('004) does not explicitly disclose a water supply means positioned adjacent to said actuator means.

Long (070) teaches an actuator means (water discharged from the swinging tray E) positioned on a housing (A) for lowering an edge of a print tray; and a water supply means (F) positioned adjacent said actuator means (see figs. 1 – 5) for flowing water across a surface of said print tray so as to remove the chemicals therefrom (page 1, lines 93 – 100).

It would have been obvious to one of ordinary skill in the art to have modified the apparatus of Sarrine ('709) to include a destaining means that comprises an actuator means as taught by Hudson ('004) and a water supply means as taught by Long ('070) because as Long ('070) explains it provides a means of automatically shifting the position of the washing tray so as to cause the water to reach every portion of the tray and to constantly renew the water in every part of the tray (page 1, lines 19 – 24).

23. Claim 22 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrine et al. (US 5,460,709) in view of Anderson et al. (US 6,932,895).

Sarrine ('709) discloses the method of in situ electrophoresis as discussed with regards to claim 1 above. Regarding claim 22, Sarrine ('709) does not explicitly disclose disposing the scanned gel plate.

Anderson ('895) teaches disposing the scanned gel plate (column 5, lines 48 – 50).

It would have been obvious to one of ordinary skill in the art to have modified the method of Sarrine ('709) to include the step of disposing the scanned gel plate as taught by Anderson ('895) because as Anderson ('895) explains the automated electrophoresis system which includes disposing the scanned gel provides the benefit of operating continuously to process in sequence a large number of gels, and typically several hundred gels per day (column 8, lines 64 – 66).

Sarrine ('709) discloses the apparatus of in situ electrophoresis as discussed with regards to claim 24 above. Regarding claim 26, Sarrine ('709) further discloses the apparatus wherein said housing (38) having a gantry (56) supported thereon, said reagent dispensing means (54), said applicator means (50), and said staining means (see abstract and column 3, lines 21 – 29) being connected to said gantry (see fig. 6 and abstract). Sarrine ('709) does not explicitly disclose a conveyer positioned in the housing.

Anderson ('895) teaches a conveyer (638) movably positioned on a housing (see figs. 1 and 50).

It would have been obvious to one of ordinary skill in the art to have modified the apparatus of Sarrine ('709) to include a conveyer taught by Anderson ('709) under the gantry because as Anderson ('895) explains the automated electrophoresis system which includes the conveyor provides the benefit of operating continuously to process in sequence a large number of gels, and typically several hundred gels per day (column 8, lines 64 – 66).

24. Claim 23 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrine et al. (US 5,460,709) in view of Anderson et al. (US 6,932,895) as applied to claim 22 above, and further in view of Warren et al. (US 5,200,045).

Regarding claim 23, Anderson ('895) teaches a step of disposing comprising: conveying the scanned gel plate to a disposal station (column 5, lines 48 – 50); and

disposing the conveyed gel plate in said disposal station (column 5, lines 48 – 50). Anderson ('895) does not explicitly teach the stacking of gel plates.

Warren ('045) teaches a step of stacking a plurality of plates as an alternative to providing a single plate (column 2, lines 4 - 11).

It would have been obvious to one of ordinary skill in the art to have modified the method of Sarrine ('709) in view of Anderson ('895) to include the step of stacking a plurality of the gel plates of Sarrine ('709) as taught by Warren ('045) because Warren ('045) expressly teaches stacking a plurality of gel plates as an alternative to providing a single gel plate (column 2, lines 4 - 11).

25. Claim 39 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarrine et al. (US 5,460,709) in view of Kercso et al. (US 6,132,685).

Sarrine ('709) discloses the apparatus of in situ electrophoresis as discussed with regards to claim 24 above. Regarding claim 39, Sarrine ('709) does not explicitly disclose a stacking means in the housing.

Kercso ('685) teaches a stacking means (see fig. 1 and column 8, lines 15 – 22).

It would have been obvious to one of ordinary skill in the art to have modified the apparatus of Sarrine ('709) to include a stacking means as taught by Kercso ('685) because as Kercso ('685) explains it has the ability to controllably raise or lower plates contained therein (column 8, lines 19 – 22).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Surekha Vathyam whose telephone number is 571-272-2682. The examiner can normally be reached on 7:30 AM to 4:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nam X. Nguyen can be reached on 571-272-1342. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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SV
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